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ABSTRACT

A large number of studies were reviewed to assess special education media and materials in terms of content and format, teacher training, information, and distribution needs. Among findings related to content and format were that there was a need for instructional games and other manipulative materials across a variety of handicapping conditions, and that there was generally a high need for materials in language arts. Teachers' training needs were in such areas as child assessment and preparation of learning prescriptions for individual students. Person-to-person contact was found to be the most valued technique for teachers to obtain information about existing materials, and teachers preferred to receive information only about materials immediately available for use in their classrooms. Large numbers of teachers were not prone to use materials not immediately available, and there was some evidence that teachers more often use instructional materials which have been demonstrated in their own classroom or school rather than materials they have not seen demonstrated. (SB)

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NEEDS FOR INSTRUCTIONAL MEDIA AND MATERIALS SERVICES FOR HANDICAPPED LEARNERS: A SUMMARY OF EXTANT INFORMATION

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The contents of this document were prepared by members of the Needs Assessment staff of the National Center on Educational Media and Materials for the Handicapped. The information represents a synthesis of a variety of studies and reports which have been produced elsewhere. The opinions expressed in this publication do not necessarily reflect the position, policy, and endorsement of the National Center on Educational Media and Materials for the Handicapped or the Bureau of Education for the Handicapped.

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SUMMARY OF MAJOR FINDINGS

With the goal of producing a comprehensive summary of the available evidence related to the needs for media and materials for handicapped learners, over 250 documents were compiled and examined. The National Needs Assessment staff at The National Center on Educational Media and Materials for the Handicapped selected the 45 studies which provided data related to the development, promotion, delivery and/or use of instructional materials for handicapped children. All of the data selected for discussion here was gathered within the last seven years; earlier data was considered outdated and therefore of little use today.

The most consistent finding reported in the studies reviewed was a need for media and materials of a particular format. Teachers consistently reported a need for instructional games and other manipulative instructional materials. A need for materials of this type was reported across a variety of handicapping conditions.

Instructional media and materials are most needed in programs for the trainable mentally retarded. Programs for the trainable mentally retarded appear to have needs for media and materials which exceed media and materials needs of other types of instructional programs. Whenever the trainable mentally retarded category was identified as a separate group, two things tended to occur. First, teachers of the trainable mentally retarded identified their needs for materials as more severe than did teachers of other handicapped students. Second, media and materials needs had a higher priority among the various program needs for the trainable mentally retarded than for any other handicapping condition.

Studies attempting to identify the subject matter or content areas of greatest need showed a great deal of variability across studies. In general, but not consistently, a high need for materials was evident in the content area of language arts. There appear to be few, if any, materials developed for handicapped students that attempt to teach career awareness. Although a number of studies have documented the lack of such materials, relatively few studies have reported that teachers of the handicapped perceived a high need for such materials.

In general, teachers of the handicapped did not report a high need for additional equipment. For the most part, teachers reported adequate access to a variety of equipment needed for use with existing instructional materials.

Training in the general use of media and materials and the use of audiovisual equipment was reported as a low need by classroom teachers. Overall, teachers' training needs were in other areas such as child assessment and preparation of learning prescriptions for individual

students. However, when provided the opportunity, teachers reported the most desired form of training in the use of media and materials to be demonstrations and in-classroom consultant assistance in the use of specific instructional packages or sets of materials.

Teachers most valued person-to-person contact as a technique for obtaining information about existing materials. When provided the opportunity, teachers tended to identify existence of a computer terminal in their school building as a desirable source of information about available or existing materials. However, when computer search facilities were available, teachers expressed dissatisfaction with obtaining information about materials not immediately available to them. Teachers preferred to receive information only about materials immediately available for use in their classrooms.

Teachers preferred to have immediate access (in their classroom or school building) to media and materials used for instruction. Although a large number of teachers make use of existing loan services, evidence suggests that the majority of teachers using these services work within a very small distance from the loaning library or materials center. Although a number of reports indicated a general national dissatisfaction with the amount of use of available materials in loaning libraries or instructional materials centers, the evidence suggests that centers which have been in operation for some time cannot expect to easily increase the percentage of teachers who borrow materials. In general, the opportunity to borrow instructional materials is valued by those who use the materials, but large numbers of teachers are not prone to use materials that are not immediately available to them in their own building or school district. Apparently, in order to use materials, teachers feel they need to have free access which is defined as storage in the classroom and/or school building. In addition, there is some evidence that teachers more often use instructional materials which have been demonstrated in their own classroom or school building and are less prone to use materials which they have not seen demonstrated.

Teachers do not highly regard evaluative information about instructional media and materials. Although there is some evidence to suggest that such information could have an impact upon the successful utilization of materials in the classroom, teachers tended to rate evaluative information about new or existing instructional packages to be of little value or use to them.

INTRODUCTION

This report represents a review of a large number of studies which have attempted to assess the needs for media and materials in special education programs. In preparing this review, an effort was made to limit the focus to an identification of the needs that are directly related to the use of instructional media and materials in special education programs. This report is limited to a summary of the major conclusions presented in the reports reviewed. Readers interested in more specific detail are referred to the reports referenced.

The major conclusions of existing needs studies were organized into four categories. These four categories were suggested by the workscope of the Area Learning Resource Center/National Center on Educational Media and Materials for the Handicapped Network prepared by the Bureau of Education for the Handicapped. They are: (1) needs for materials in terms of the content and format of the instructional materials, (2) needs for training in the use of instructional media and materials, (3) needs for information about existing media and materials, and (4) needs for methods and strategies of distributing media and materials. These four categories are not mutually exclusive; some information presented is relevant to more than one category.

Nature of the Data Reviewed

The needs assessment studies reviewed in this document are quite varied. A small number were formal studies and produced detailed reports. Other studies were much less formal and were frequently included as part of records maintained by special education instructional materials centers or data reported within a study of broader scope. A few studies attempted to identify the needs within programs in several states. However, most studies were limited to identification of the needs within one state or part of one state such as a small number of counties, one county, or a city. A number of the reports reviewed herein focused on needs within particular geographic regions such as the state of Ohio and the Far Western Regions of the country. All of the geographical regions of the United States are not represented by the studies which were reviewed.

With very rare exception, the needs for instructional media and materials were identified by teachers of the handicapped. Using teachers as the primary source for information about existing needs for instructional media and materials seems logical but presents both advantages and disadvantages. It may be argued that instructional media and materials help classroom teachers meet the learning needs of students. It is the classroom teachers who really have needs for

instructional media and materials to assist them in meeting obligations to the students. Although it may be argued that students have needs for media and materials, most investigators chose teachers as the primary source for information on media and material needs.

One disadvantage to limiting the information source to classroom teachers is the possibility that needs perceived by classroom teachers are not the same as needs perceived by other reference groups. Hershey (1973), in a study of needs in the state of California, demonstrated that school administrators reported the needs for media and materials to be substantially less severe than did classroom teachers. Hershey considered his finding as important since it was the administrators who most often had the responsibility for purchasing instructional materials for use in classrooms.

An important consideration in limiting the identification of needs to one source group is that perceived needs are dependent upon the values and experiences of the respondents. A number of studies have reported that teachers who have used services and materials tend to rate those services and materials as more necessary than do teachers who have not used the services or materials. Therefore, teachers who have used and have access to new materials or forms of materials are likely to perceive a need for those materials, whereas teachers who have not used or do not have access to such services or materials will not identify them as needed. In the state of Wisconsin, for example, (Smith, 1973) teachers who had experienced classroom demonstration of new materials identified the need for such a service, whereas teachers who had not experienced the service rated the need to be substantially lower. Therefore, needs are often created. Teachers will seldom express a need for a specific type of service or material until they are aware of its existence and have seen and used it in some exploratory manner.

How Needs Were Identified

It must be emphasized that the needs assessment studies cited in this document were conducted for a variety of purposes. The information reported by the various studies was seldom, if ever, directly comparable in either the way the questions were asked or their focus. Obviously, the form of the question somewhat determines the nature of the response. For example, consider the different responses which might be elicited by these two questions: "In which content area do you have difficulty identifying or using instructional materials?" and "Do you have a need for additional materials in content area X?" The response mode will also influence the nature of the response. Some investigators asked teachers merely to indicate a need with a yes/no check. Others requested teachers to report the degree of need with a five or seven point rating scale from high need to low need. Other variations of response were utilized.

Another potential problem in the review and interpretation of various studies relates to the ranking or prioritization system used within each of the studies. Few studies made an effort to obtain a prioritization of observed needs. Most studies limited their report to the percentage of teachers responding yes/no or the mean or median response to each question on a rating scale. Such data can often lead to misinterpretation of priorities. For example, the teacher who perceives a relatively low need for materials in mathematics and a very high need for materials in career education would respond "yes" to questions on both subjects. Even when teachers are provided the opportunity to indicate need through a rating scale, a group of needs which receive approximately the same rating can have quite different priorities. For example, teachers can have a high need for both materials in social studies and in language arts but can rate the need for materials in language arts to be a much higher priority than needs in social studies.

Needs Differentiated by Handicapping Conditions

The large majority of studies examined did not attempt to differentiate needs by various handicapping conditions. Although many of the studies asked the respondents to identify the handicapping conditions of the students with which they worked, few studies separately reported the responses of teachers who worked with each handicapping condition. In most cases the data were aggregated across all handicapping conditions. This reporting strategy presents a particular problem because it can be demonstrated that teachers who work with different handicapping conditions have different types of materials needs. In the few studies which did report data for different handicapping conditions, it was observed in most all cases that needs varied both in type and in intensity. This finding was particularly evident for materials needs in specific content areas and particular formats such as audio tape and/or print material. Further differentiation of needs by age or grade level of the learner was generally not reported in the studies reviewed.

CONTENT AND FORMAT OF INSTRUCTIONAL MATERIALS

Most existing needs assessment studies collected data about the perception of needs by teachers who work with students with a variety of handicaps. However, most reports did not separately tabulate and present identified needs for each handicapping condition. The majority of the studies reported data only after aggregating across teachers working with students with any of the several different kinds of handicaps. This presents a particular problem for the reader because there is sufficient evidence to indicate that in the areas of content and format of media and materials, the needs vary by handicapping condition. That is, programs designed for trainable mentally retarded students have quite different needs from programs designed for deaf students or speech and language impaired students.

Four studies which serve as indicators of the differing needs by handicapping conditions are the Lilly and Kelleher study (1971) for the Northwest Regional Special Education Instructional Materials Center; the Hershey study (1973) conducted in cooperation with the Sonoma County Associate Instructional Materials Center for Special Education in the State of California; the study by Curtis, Summers, and Fulp (1974); and the study by Friesen, Williams, and Bulgarella (1967) for the Michigan Special Education Instructional Materials Center.

The remainder of this discussion is divided into four sections: (1) common findings, a discussion of the similar needs identified by several reports; (2) needs for media and materials in specific content areas; (3) needs for media and materials of a specified format such as print, film, or audio tape; (4) needs for audiovisual equipment. Where possible, the reported needs for media and materials will be discussed by handicapping condition.

Common Findings

The single content area which most frequently appeared as a high priority need for new-and/or revised instructional materials was language arts, language construction or language development. Of the many potential content areas, only a few frequently appeared in the needs assessment instruments across studies. These were language arts, social studies, science, and mathematics. There does not appear to be a high need for materials in the mathematics or science areas, however, Lilly and Kelleher (1971) did find that teachers reported great difficulty in obtaining science materials for use as seat work exercises for students. Most studies reported a low to moderate need for new and improved materials in social studies. However, one study (Lilly and Kelleher, 1971) reported that the greatest need for materials was in the area of social studies.

Overall, teachers of the handicapped have not reported high needs for media and materials. When given an opportunity to rate needs for media and materials in relation to other needs, such as needs related to student diagnosis and prescription, needs for materials were rated as a much lower priority (Brickell, Wong, and Grossman, 1974i; Curtis et al., 1974; Hershey, 1973; Latham, 1973; Latham, Pellant, and Burgoyne, 1973; Lilly and Kelleher, 1971). The one exception to this trend came from teachers of the trainable mentally retarded. Most studies which reported data differentiated by handicapping condition showed evidence that teachers of the trainable mentally retarded rate needs for media and materials as more severe than do teachers who work with students with other types of handicapping conditions. Evidence for this conclusion was found in the studies by Lilly and Kelleher (1971), Curtis et al. (1974), Hershey (1973), and Friesen et al. (1967).

Needs assessment studies which inquired about the format of needed media and materials indicated very consistent responses. Teachers reported the greatest needs for instructional games and manipulative materials. In almost every instance where instructional games and/or manipulative materials were included in the list of formats for materials, these categories were the top ranked needs. A second level of need exists for supplementary and individualized materials.

Teachers did not report a high need for new print materials. However, there is some evidence that teachers believe that much of the print material should be revised and updated. Overall, teachers tended to report that the available filmstrips and audio materials are adequate for their use (Brickell et al., 1974i; Curtis et al., 1974; Garland, 1972; Williams, Johnson, Smyke, and Robinson, 1968).

Very few needs assessment studies of special education programs addressed the issue of needs for equipment. In these few studies, teachers reported that they have adequate access to traditional equipment, especially movie, slide, and overhead projectors and tape recorders. The two kinds of equipment which are generally not available are still cameras and TV equipment. Although many teachers perceived the use of a still camera as appropriate, few teachers reported TV and/or video tape equipment as appropriate for use in the classroom.

Content Areas

As previously noted, few studies which reported needs for media and materials in specific content areas identified these needs with specific handicapping conditions. Sufficient detail is available in these few studies to make it apparent that teachers who work with students with different handicaps report different needs for media and materials.

Hearing Impaired. A few studies have attempted to differentiate needs for materials for the deaf from the needs of the hard of hearing. Because of the lack of a consistent definition for these two terms, they will be considered jointly here.

Overall, teachers of the hearing impaired did not express a high need for new materials. In the Friesen et al. study (1967), Michigan teachers were asked to check each content area in which "more or other" materials were needed. In the traditional content areas of science, mathematics, language arts, and social studies, the percentage of 101 teachers who checked the respective areas were only 54 percent, 35 percent, 70 percent, and 55 percent. All other areas were checked by 20 percent or fewer teachers. In the Lilly and Kelleher study (1971), 77 teachers of the deaf and of the blind reported little difficulty in obtaining and using materials. On a scale of one to five with one representing no difficulty and five representing great difficulty, the mean rating in almost all of the sixty-five content areas was less than 3.0 and most were less than 2.5. This rating was nearly the same as the ratings provided by regular classroom teachers and teachers of the mildly handicapped, but was lower than the rating by teachers of trainable mentally retarded students. Similar levels of responses can be found in other reports. These findings do not indicate that programs for the hearing impaired have no media and materials needs, but rather they are an indicator that teachers believe other problems are more severe.

High needs for media and materials for the hearing impaired were reported in the areas of reading, language arts, and social studies. The areas of reading and reasoning showed the greatest needs for new materials in a study by Curtis et al. (1974). Earlier, Lilly and Kelleher (1971) found the need for reading materials to be moderately high. Language arts was identified as a very high need area by Friesen et al. (1967) in the Michigan area and by Lilly and Kelleher (1971) in the Pacific Northwest. Curtis et al. (1974) found this to be an area of only moderate need. Social studies materials were identified as a first priority need by Lilly and Kelleher (1971) and second priority by Friesen et al. (1967).

Career awareness and vocational materials were not identified as a high need in 1967 by Michigan teachers (Friesen et al.). However, in 1974, career awareness materials were identified by a nationwide sample of teachers of the deaf as a high priority need (Curtis et al., 1974).

The need for mathematics and science materials was reported as quite low (Friesen et al., 1967; Lilly and Kelleher, 1971; Curtis et al., 1974).

Educable Mentally Retarded and Trainable Mentally Retarded. A complex problem exists in trying to decipher the collection of needs assessment studies which have identified educable mentally retarded and trainable mentally retarded as separate groups. Some reports aggregated these two groups. Some reports aggregated educable mentally retarded students with other "mild handicaps" and some studies failed to differentiate between the two categories. Lilly and Kelleher (1971) indicated that teachers of the trainable mentally retarded identified needs for media and materials as a much more severe problem than did teachers of students with any other handicap. In addition, teachers in Sonoma County, California, identified media and materials as a more critical need for trainable mentally retarded than for any other handicapping area (Hershey, 1973).

Although there is some inconsistency among the studies which reported specific data concerning the mentally retarded, the greatest needs appear to be in the areas of mathematics and mathematics applications and in the area of social studies (Friesen et al., 1967; Lilly and Kelleher, 1971). A third area of need is for materials in the sciences. This finding tends to verify the results obtained by Williams et al. (1968) in a study of the needs for special education students. Although the data for this latter study were not separated by handicapping conditions, the majority of teachers who responded to the investigation worked with educable mentally retarded students.

Visually Impaired. Few studies have attempted to identify the media and materials needs of teachers of the visually impaired. A study conducted in Michigan by the USOE/MSU Regional Instructional Materials Center for Handicapped Children and Youth (1967) indicated that fewer than 18 percent of the 93 teachers responding identified a need for large print materials in mathematics. Approximately the same percentage identified needs for additional material in language arts whereas slightly over 25 percent of the teachers responding identified a need for more materials in either braille or large print for the social studies content area. Very low percentages of the total number of respondents identified needs in the other content areas. However, the study indicated that very few of the total group of teachers actually taught in some of the subject areas such as art and music. The percentages of the total group of teachers who identified needs for materials in art and music were nearly the same as the percentages of teachers who indicated they taught in those areas.

Other Handicaps. Two studies reported data specifically for teachers of students with learning disabilities (Friesen et al., 1967; Lilly and Kelleher, 1971). There was little similarity in the findings of these two reports due to the variability of the definition of learning disability. Because of this variability, the data will not be summarized here.

Leach (1970) studied the needs of deaf-blind students and reported the greatest needs to be in communication skills, sensory development, self-care, daily living skills, and self-concept formation. Other handicapping conditions, such as emotionally disturbed, orthopedically handicapped, and speech and language impaired, were not reported as separate categories in the studies reviewed for this report.

Needs Undifferentiated by Handicapping Conditions. As was discussed earlier, there is some evidence that teachers of the handicapped do not view lack of appropriate media and materials as a serious problem. Although a substantial number of teachers do not make use of available services providing the loan of specialized materials for handicapped students, a study by Brickell et al. (1974i) in the state of Ohio indicated there is little probability the use of such a loan service would increase even if teachers became more aware of the service. The reader must remember, however, that perceived needs are directly related to current values and that perceived needs can be changed. Once teachers have become accustomed to borrowing specific materials and are made more aware of the utility of such services, they perceive a greater need for them (Smith, 1973). Only one study was reviewed which reported teachers perceiving an inadequate supply of materials for the handicapped (Latham et al., 1973). In this study, teachers in remote parts of Alaska indicated they had inadequate supplies of materials for special students. A study by McMahon (1973) indicated that teachers in Wisconsin did not perceive any serious problems with the quality or availability of media and materials.

Garland (1972) summarized a survey of special education teachers in the state of Missouri. A similar summary was reported by Pascale and Murray (1973) who studied the perceptions of teachers in the northeast region of the state of Ohio. Both the Garland and Pascale and Murray reports indicated the first priority need for new materials was in the area of language arts or language development. Also, combining handicapping conditions, the report by Curtis et al. in 1974 indicated a mild level of need in the area of language construction. An earlier report by Williams et al. (1968) indicated reading to be an area which required improvement in existing materials whereas the Garland (1972) and Curtis et al. (1974) reports indicated reading to be an area of fairly high priority.

Career awareness and/or vocational occupational materials have not been identified as high priority by any study which included other categories. Heaney (1974) attempted to identify a need for vocational training programs for handicapped youth. She found little existing materials available for use in special programs. However, this study did not attempt to prioritize the need for materials on career awareness and vocational occupational training in relation to other content areas. The 1974 studies in Ohio by Brickell et al. also indicated that few materials existed in the area of career awareness and vocational or

occupational training. This content area was one of the few areas where additional materials might be expected to be utilized by a greater number of teachers.

The content areas of social studies present a mixed picture. The reports by Garland (1972) and Pascale and Murray (1973) indicated social studies to be a low area of need. Williams et al. (1968) indicated social studies materials to be a second priority. However, the 1971 study by Lilly and Kelleher indicated social studies to be the first priority for materials. This result was due primarily to the fact that the Lilly and Kelleher study asked teachers about their difficulty in obtaining and using media and materials for specific types of task areas or subject areas within each major content area. Social studies was defined very broadly and included topics such as union membership, fringe benefits, job applications, sex education, state and federal government, and law.

The studies by Pascale and Murray (1973), Curtis et al. (1974), and Garland (1972) all found the needs for mathematics materials to be relatively low. Teachers' reports of needs for materials in perceptual development training and/or motor training were mixed. Some reports indicated high need; other reports indicated low need. Few teachers reported needs for additional materials for teaching handicapped students in art or music. Similar to the mathematics area, when aggregated across handicapping conditions, the need for science materials was reported as not very great. Materials needs in home economics, industrial education, physical education, and foreign languages tended to be rated as low priorities.

The only high priority need for media and materials identified during a special 1973 conference dealing with *Delivery of Special Education Services in Rural Remote Areas* was the need for more curriculum materials which recognized cultural differences.

Needs for Format of Materials

Needs related to format of materials also vary by handicapping condition. This conclusion should be very obvious after considering that visually impaired students have different needs for visual materials than do hearing impaired students.

Format Needs Differentiated by Handicapping Conditions. Teachers' needs for media and materials for hearing imparied students varied with the report. Earlier studies, for example, the study by Friesen et al. (1967), identified a high need for print materials. More recently, Curtis et al. (1974) identified the top priority needs to be instructional games, manipulative devices, pictures, and supplementary materials.

Studies which have reported needs of mentally retarded students have indicated basic needs for instructional games, manipulative materials, and audio tapes (Friesen et al., 1967; Curtis et al., 1974; Kinsaul, Dorn, and Jensen, 1973). There are additional needs for supplementary materials such as pictures and activities outlines.

Friesen et al. (1967) indicated that learning disabled students had a high need for print materials. Curtis et al. (1974) indicated needs for audio tapes, instructional games, manipulative materials, and pictures.

Teachers of the visually impaired reported a greater need for large print materials than for braille materials (USOE/MSU Regional Instructional Materials Center for Handicapped Children and Youth, 1967).

Format of Materials Undifferentiated by Handicapping Condition. When needs related to format of materials are aggregated across handicapping conditions, they sometimes lose their meaning because needs of low incidence handicaps tend to be lost. As indicated earlier, the greatest need is for instructional games and manipulative devices (Curtis et al., 1974; Garland, 1972; Williams et al., 1968; Brickell et al., 1974). Although needs for supplementary materials were identified as very high by Williams et al. (1968), the need for supplementary materials was found to be somewhat less important in the 1972 study by Garland.

In general, teachers do not perceive a high need for print materials, flash cards, books, or workbooks. Questions related to the need for this type of material received answers indicating teachers had sufficient print materials (Garland, 1972).

With the exception of the identification of a high need for audio tape materials for mentally retarded students and/or students with learning disabilities, few teachers identified a high need for audio materials for other handicapping conditions. In general, no study identified the needs for visual materials as very great with the exception of the study by Garland (1972) and a study by Armstrong and Senzig (1970). In the Armstrong and Senzig study, teachers were asked to identify whether audiovisual materials, such as film, filmstrips, etc., were useful. Teachers responded by rating such materials as very useful. In the Garland (1972) study, teachers identified a general category of audiovisual aids as a second level of priority. In this case, the need for such visual material was substantially below the need for instructional games and manipulative devices but was substantially above the need for print materials.

Few studies asked teachers to respond to questions regarding high interest-low vocabulary materials. One study asked teachers to identify some of the major problems related to the usefulness of print

materials (Friesen et al., 1967). Many teachers indicated vocabulary levels were too high. This would tend to indicate that low vocabulary materials for handicapped students who read substantially below grade level is one form of needed print materials.

Although the studies by Kakalik, Brewer, Dougharty, Fleischauer, and Genensky (1973; 1974) indicated that there was a substantial need for hearing aids, orthopedic devices, and other sensory aids for handicapped students, these needs were seldom included on surveys of teachers of the handicapped.

Needs for Equipment

In general, teachers did not find availability of equipment to be a major problem and no study reported a high priority need for additional equipment. At the same time, it should be noted that teachers have little access to some types of equipment. For example, few teachers have access to a still camera, radio equipment, or television equipment. With the exception of availability of a camera, teachers seldom reported a perceived difference between equipment that is available and equipment that is appropriate or valuable for use in the classroom. In a 1968 study by Williams et al., for example, 78 percent of the teachers responding indicated they perceived existing equipment as adequate. The Lilly and Kelleher study (1971) indicated that although 47 percent of the teachers responding did not have cameras available, only 12 percent indicated that cameras were not appropriate. Television equipment was not included in the list of appropriate equipment. Thirty-three percent of the teachers reported the lack of availability of an opaque projector but 13 percent indicated that the opaque projector was not appropriate for their use. Only small percentages of teachers indicated other equipment was not available. For example, 18 percent of teachers indicated that an overhead projector was not available. A study by Armstrong and Senzig (1970) reported the filmstrip projector and chalkboard as the most appropriate equipment for the classroom. Tape recorders were also perceived as very useful, but radio, television, and overhead projectors were not perceived as useful. An evaluation of a summer institute for teachers of the deaf (Hoover, 1971) indicated that all teachers reported sufficient access to a variety of audiovisual equipment with the exception of television and 8mm projectors. Teachers also indicated that they were most likely to use overhead projectors and filmstrip projectors.

In general, it can be concluded from the studies reviewed that, with the possible exception of some scattered regions throughout the country, most teachers of the handicapped have adequate access to equipment. It can also be concluded that such teachers do not report television and radio highly valuable for utilization in the classroom. Seldom is such equipment available to teachers. Perhaps if more equipment of this nature were available and were demonstrated to be of practical utility in the classroom, teachers would report a greater need for such equipment.

MEDIA AND MATERIALS TRAINING

Most of the available data on training needs come from the Midwest or the Far West Regions of the United States. Because of this, the conclusions drawn from these studies should be used cautiously.

In general, training topics related to media and materials were rated as less important than topics such as child assessment and diagnostic techniques, training in writing prescriptions, and training parents. Of the teacher training topics that relate to media and materials, two were consistently rated as high priorities. The most important and widely mentioned of these two topics was training in the use of instructional materials. The second topic, not as widely mentioned, was training in designing and adapting instructional materials.

Three formats for training were consistently rated higher than all others. It is very difficult to determine which of these formats teachers need most. These three formats are demonstration, in-class consultant services, and workshops.

Finally, several studies indicated certain factors which affect teachers' participation in training. Six factors were isolated from the data: incentives, location of training, time of training, size of the group, the trainer, and notice of the training. Three important incentives were indicated by the data: the content of the offerings, university credit, and obtaining materials for use in the classroom. Teachers preferred that the training take place in the local school district either during the day or immediately after school. They preferred that the size of the group be six to twenty-five people, and that the trainer be a specialist or expert in the area of training offered. In addition, the teachers wanted plenty of advanced notice about the proposed training.

Training Topics

Three training topics which are not directly related to media and materials were studied. When these topics were compared with topics dealing with media and materials, they were rated as greater need areas. The most frequently mentioned of the topics was child assessment techniques. Training in how to assess individual students was rated second of 15 potential instructional materials center services by 61 special educators in California (Hershey, 1973). Heaney (1974) identified a list of needs for local education agency services. Among those identified was training in methods of diagnosing and assessing skills of handicapped students. Brickell et al. (1974) conducted 16 regional needs assessment studies in the state of Ohio. In seven of the eight reports reviewed for this section, training in child assessment techniques was rated as one of the highest priority topics for future

training (1974a; 1974b; 1974c; 1974d; 1974e; 1974g; 1974h). In another Ohio study, teachers from the Akron, Kent, and Youngstown area also rated this as a high priority need (Pascale and Murray, 1973). The Brickell et al. reports mentioned two other high need training topics: training in writing prescriptions and training parents to help their handicapped children. Both of these topics were identified as high priority needs in seven of the eight regional reports reviewed. It should be noted that Brickell et al. (1974i) found that training in media and materials was a low priority for teachers in general. This was true for all of the Brickell reports reviewed.

Concerning media and materials, the topic identified most often as a top priority need was training in the use of instructional materials. Teachers in Harney County, Oregon, identified this as a high priority (Martineau, 1973). As a result of a survey of teachers in Union County, Oregon, Pellant and Latham (1973) recommended periodic workshops in the use of instructional materials. A survey of 40 special education teachers on Guam identified training in the use of instructional materials as important (Latham, 1973). In southern Connecticut, training that provides good knowledge about materials was assigned priority number twelve out of 75 items by 52 beginning special education teachers (Weinthaler, 1973). This same study identified use of materials as an important competency. Williams et al. (1968) reported that 48 percent of 588 teachers desired more exhibition of materials at local schools. Garland (1972) reported that over 84 percent of the 124 teachers in Missouri who responded to their survey desired workshops and consultant services in using instructional materials. In the Northwest region of the United States, 831 teachers also desired training in the use of new materials and types of student activities (Lilly and Kelleher, 1971). Forty-five teachers in Wisconsin made training in the use of new materials and methods a first priority topic (Smith, 1973). Finally, the Northwest Regional SEIMC (1973) reported that the best attended workshops in Northern Idaho were those dealing with the utilization of materials and classroom demonstrations of materials.

Training in finding instructional materials is another important topic. Lilly and Kelleher (1971) identified three important training topics. Finding materials was one of these. Over 76 percent of 124 teachers in Missouri (Garland, 1972) wanted training either by workshops or by consultant services in how to buy instructional materials. In this study, buying included ways of locating materials. In 1968, 48 percent of 588 teachers who responded to a survey conducted in Arizona, California, Nevada, and Wisconsin desired orientations to the location and availability of instructional materials (Williams et al., 1968). Finally, of 75 identified training needs, 52 beginning special education teachers ranked the need for training in locating and obtaining information about materials as thirteenth (Weinthaler, 1973).

A number of studies have reported the high priority nature of training in adapting and designing instructional materials for classroom

use. Weinthaler (1973) reported that training in improving and/or making materials was ranked twenty-second of 75 identified needs. In addition, she reported that modification of materials and development of materials were two of five items that make up fairly high priority needed competencies in media and materials. In 1973, the first priority training need for teachers in Sonoma County, California, was learning to design and prepare appropriate instructional materials (Hershey, 1973). Latham (1973) reported that the special education teachers on Guam wanted more training in the production of media and materials. The highest priority of teachers in the Akron, Kent, and Youngstown area of Ohio was training in the design of assessment techniques and the design of instructional techniques, including materials (Pascale and Murray, 1973).

In addition to these three basic topics, a number of other training topics in media and materials were mentioned by one or more studies as fairly high on the priority list. Weinthaler (1973) reported that teachers in southern Connecticut ranked training in what materials to order as seventh out of 75. Training to familiarize teachers with a broad range of instructional materials was a high priority of teachers in the Northwest region of the United States (Lilly and Kelleher, 1971).

Training in the use of audiovisual equipment was reported as a high priority need by two studies. Garland (1972) found that 72 percent of the 124 teachers surveyed in Missouri desired consultant services and 74 percent desired workshops on this topic. In a study by McMahon (1973), one of three high priority training topics was training in the use of audiovisual equipment. Hoover (1972) found that teachers felt there was a very low probability that training in the use of instructional TV and its related equipment would be useful; teachers reported that they did not have the necessary equipment available to them.

Training Formats

There are three formats for training which teachers found to be highly desirable: in-class consultant services, workshops, and demonstrations. Martineau (1973) reported that teachers in Harney County, Oregon, preferred in-class assistance over workshops. Teachers in Alaska stated that in-class assistance was highly desirable, but these teachers did not have in-class assistance available to them (Latham et al., 1973). The same was true for Guam. There, teachers placed a high value on in-class assistance (Latham, 1973). Consultation and visits from instructional materials teachers was the second priority training format for teachers in Wisconsin (Smith, 1973). She also reported that the existing service of the instructional materials teachers was highly praised by those responding. McMahon (1973) reported that 70 percent of the principals in the Milwaukee area said the consultation was helpful. McMahon also reported that of 308 teachers

who had worked with an instructional materials teacher, 87 percent said the service provided was good. In Union County, Oregon, 39 percent of the responding teachers wanted in-class assistance with using materials, and 77 percent of the responding teachers desired in-class assistance with the "hard to teach" child (Pellant and Latham, 1973). More than 72 percent of the responding teachers in Missouri desired some form of consultant services related to media and materials (Garland, 1972).

Teachers' desires for workshops were mixed, ranging from very desirable to moderately desirable. Teachers in Alaska rated workshops as a highly desirable training format (Latham et al., 1973). In addition, Pellant and Latham (1973) recommended workshops to the local Instructional Materials Center in Union County, Oregon, based on the data collected from teachers in that area. The study showed that 39 percent of the teachers wanted workshops on teaching the "hard to teach" child. In northern Idaho, the Northwest Regional Special Education Instructional Materials Center (1973) found similar feelings among teachers. Forty-two percent of the teachers responding to the survey by Williams et al. (1968) identified workshops and inservice training as an important function of instructional materials centers. Thirty-three percent of these teachers desired the instructional materials centers to offer more seminars and workshops. Smith (1973) found that teachers in Wisconsin rated regular inservice for all special education teachers as the third priority service provided by an instructional materials center. In addition, she found that small group inservice training for individual school districts ranked fifth. The Syracuse Associate Special Education Instructional Materials Center (1970) reported that of 119 respondents from the Syracuse, New York, area 31 desired workshops on curriculum development, 53 desired workshops on subject matter content, and 45 desired workshops on teacher-group problem solving. Finally, the 1974 Brickell et al. studies agreed that workshops and demonstrations were the most desired training formats for teachers in Ohio.

Demonstrations were the most desired training format for teachers in the Kent, Akron, and Youngstown region of Ohio (Pascale and Murray, 1973). The Syracuse Associate Special Education Instructional Materials Center (1970) reported that 75 of 119 teachers in the Syracuse, New York, area desired demonstrations as a form of training. Fifty-four percent of the teachers in Arizona, California, Nevada, and Wisconsin identified demonstrations as one of the most important functions of the instructional materials centers (Williams et al., 1968). In addition, 48 percent of this same sample of teachers desired more exhibitions of materials at local schools. Finally, Pellant and Latham (1973) recommended more materials demonstrations be available at local schools in Union County, Oregon.

A number of other forms of training are acceptable and liked, but are not highly desired. These training formats are: teacher-to-teacher help sessions, self-instructional materials, trips, work sessions with

children, discussions and rap sessions (Syracuse Associate Special Education Instructional Materials Center, 1970; Brickell et al., 1974; Pascale and Murray, 1973).

Lectures are least desired as a training format. In the Syracuse, New York, area only 18 of 119 teachers desired guest lecturers (Syracuse Associate Special Education Instructional Materials Center, 1970). Brickell et al. (1974i) found that lectures were the least valued training format without exception. In the Akron, Kent, and Youngstown region of Ohio lectures were rated low, along with reaction panels, round tables and regional conferences (Pascale and Murray, 1973).

Factors Influencing Participation

Six factors influencing teacher participation in training were isolated. These factors were potential influences on the teachers' decisions to participate in training. Although these factors may not be seen as needs per se, they are presented in this review because they can be useful to those who plan and carry out training sessions for special education teachers. In addition, certain individual needs of the teachers are implied by this data.

The first factor is that of incentives. Brickell et al. (1974) systematically collected data on incentives in each of the 16 Ohio regions. Teachers in all regions rated the content of the proposed training as the most important of six incentives examined. University credit and receiving classroom materials were also highly rated in a number of regions. Reimbursement of expenses was consistently rated as low priority. Pascale and Murray (1973) also reported on teachers' reactions to reimbursement. They reported that 40 percent of 75 teachers indicated it would have no effect on whether they participated or not; 32 percent of the teachers indicated they would choose the offerings more carefully if there was no reimbursement; 17 percent of the teachers indicated they would attend fewer of the offerings if no reimbursement was forthcoming; and 8 percent of the teachers indicated they would not attend unless they were reimbursed. Finally, Brickell et al. (1974) reported that salary credits and a certificate of completion were of little importance to the teachers surveyed.

Another factor of interest is the location of the proposed training. In most Ohio regions Brickell et al. (1974) found that teachers preferred training to be held at a location in the local school district. The second choice of the teachers was the local materials centers, with a university campus being a third choice. Pascale and Murray (1973) reported that the teachers preferred the local materials center, with the university campus a close second. The latter survey did not ask about training in the local school district. It is clear that teachers wanted to keep travel at a minimum.

Time of training is another factor that showed up in some of the reports. The Brickell et al. reports (1974) found that the best training time was during school or after school. McMahon (1973) stated that teachers preferred to be released from school for inservice, since night meetings cause many conflicts. Teachers in the Akron, Kent, and Youngstown region of Ohio preferred training either before school begins in the fall or on Saturdays (Pascale and Murray, 1973).

One report commented on the ideal size of the training group (Pascale and Murray, 1973). General consensus of the 75 teachers surveyed put the optimal size between six and 25 people.

Another factor mentioned briefly in the reports was notice of the offerings. McMahon (1973) pointed out that teachers desired better or more advanced notice of inservice meetings. Fifty-three percent of the 588 teachers surveyed in Arizona, California, Nevada, and Wisconsin did not hear about the Special Education Instructional Materials Centers' field demonstrations. In addition, 45 percent of these same teachers did not hear about the workshops offered by the Special Education Instructional Materials Centers (Williams et al., 1968).

The final factor mentioned in the studies was the people responsible for carrying out the training. Most of the teachers in Ohio agreed that they preferred the trainer to be a specialist or expert in the area being offered (Brickell et al., 1974a; 1974b; 1974c; 1974d; 1974e; 1974f). In one region, teachers desired a team of specialists and university professors, and in another region, teachers desired a team of specialists and materials center personnel (Brickell et al., 1974g; 1974h).

INFORMATION ON INSTRUCTIONAL MATERIALS

The types of information used by special educators in selecting instructional materials is a topic which has been largely ignored by researchers and practitioners alike. The use of evaluative information is the one area which has been explored. Teacher interest in evaluative information has been shown to be quite low, although experimental evidence indicates that its use can increase student performance. A systematic study of the types of information sought and used by educators would be tremendously useful in designing information systems of maximal use to educators.

The available sources of information on instructional materials are many and varied. The location of the source is an important variable; local sources are most often sought and used by special educators. Instructional materials centers have been an effective source for materials information; they have shown a very positive impact on teachers' knowledge of instructional materials. Instructional materials center newsletters often serve as sources of information on instructional materials; the primary reason special educators read newsletters may be to gain information on instructional materials. Catalogs, while not widely available, are in great demand. The most promising source of information appears to be information retrieval systems; the interest in this service far exceeds all others.

Types of Information

The availability, desirability, and usage of various types of information in the selection of instructional materials is a topic which has received very little attention in the literature of special education. No data could be found regarding the use of bibliographic information, information on the format, or information on the instructional characteristics of materials. Data are available on only one type of information--evaluative information.

The evidence which has been examined indicates that special educators have little interest in receiving evaluative information about materials. At the same time, experimental evidence indicates that teachers' knowledge of evaluative information can have a positive effect on student success in using instructional materials.

Evaluative information on media and materials has been provided to teachers of handicapped students primarily through the intrastate associate instructional materials centers. A national survey of 134 of the approximately 283 centers in operation in the fall of 1971 indicated that 71 percent of the centers provided services related to the evaluation of materials and equipment (McMahon, 1973). A more recent survey of 32 of the 54 associate centers in the Great Lakes region indicated that 91 percent of the centers provided materials evaluation (Great Lakes Region Special Education Instructional Materials Center, 1974).

While evaluation services appear to be widely available, the usage and desirability of these services appear to be very low. The cause of this lack of interest is not clear. Evidence from a statewide survey of 695 special educators in Ohio (Brickell et al., 1974i) showed clearly that "special educators are not interested in getting help from their Instructional Resource Centers in evaluating materials (p. 28)." In fact, of all the service areas explored in this study, evaluation of materials by either center staff or by special educators aroused the lowest response both in terms of present use and interest in future use.

Other evidence indicates some degree of interest in evaluative information. A survey of 125 special educators in Missouri (Garland, 1972) showed that 72 percent indicated a need for feedback from the evaluation of instructional materials. In addition, 61 percent indicated a need for consultant services in evaluating instructional materials. Positive reaction was also apparent in Sonoma County, California (Hershey, 1973) where 61 special educators ranked evaluation services fourth out of 15 for appropriateness and usefulness. This service was ranked eleventh out of 15 by 55 related professionals. Clearly, evaluation services are more highly valued by teachers than by other related professionals in special education. A desire for better evaluation of materials was expressed by personnel from the Texas associate centers who use the services of the SEIMC at the University of Texas (McLaughlin, Hinojosa, and Trlica, 1971). This may indicate that these centers are receiving requests for this type of information.

The question still remains, if evaluative information were available and used, would it actually make a difference in the classroom? One bit of evidence exists which suggests that it can and does. Bogatz (1971) compared the effect of teacher knowledge of positive, negative, or no evaluative information on student performance with two instructional materials, one of which was programmed. Teachers of 24 educable mentally retarded classes used both materials with their students for 24 days, a minimum of 30 minutes a day. Student performance on pre and post tests were compared. With one material, performance was better for the teachers who had seen the positive evaluation than for those who had seen the negative evaluation or no evaluation at all. With the programmed material, however, no differences were found. Bogatz suggested that this may be due to the fact that the child works independently of the teacher with this type of material and therefore the teacher has less influence on the child's performance. The study clearly indicates that evaluative information can be a powerful tool and therefore deserves careful development and dissemination.

Sources of Information

Local sources of information on media and materials are most often sought and used by special educators. A survey of 588 teachers in Wisconsin, Arizona, Nevada, and California (Williams et al., 1968) showed

clearly that local sources were both preferred and used to a greater extent than other available sources. Local instructional materials centers were used by 61 percent of the respondents. University facilities and the regional Special Education Instructional Materials Centers were used by about half the respondents, while ERIC and Regional Laboratories were used by only about 10 percent of the respondents. These teachers were also asked to indicate the most important sources of information on special education materials. Conversations with other teachers, talks at special education teachers meetings, and local workshops and demonstations were the most important sources listed. Published sources such as newsletters, journals, and catalogs were not rated as highly. It is clear that teachers value local sources of information more highly and use them more frequently than any other sources of information on media and materials.

Instructional Materials Centers. What role have the instructional materials centers played in providing information on instructional materials to special educators? Consultation about instructional materials has been one of the primary responsibilities of the instructional materials centers. A national survey of 134 of the 283 instructional materials centers in operation in 1971 showed that 84 percent of the centers provided consultation on materials (McMahon, 1973). These services have taken a variety of forms including providing publications, individual consultation, materials training, mailing information, providing professional literature, bibliographies, catalogs, etc. While some services are used more extensively than others, it is clear that information services of these types are widely used by special educators.

A survey of 695 Ohio special educators (Brickell et al., 1974i) explored the use and potential growth of 34 instructional materials center services, nine of which were related to information services. Listed in order of potential growth these services were:

A. a computer terminal at the school to get educational prescriptions for individual children;

B. a computer or a computer terminal at the school to access information about materials and services;

C. looking at materials at the Center;

D. publications such as Instructional Resource Center newsletters, bulletins, evaluation reports, catalogs;

E. consulting with Center staff about selecting and using instructional materials;

F. individual consultation in such areas as the use of Instructional Resource Center materials and services;

G. mail delivery of information about materials and services;

H. getting copies of evaluations of materials by classroom teachers;

I. getting the Center to review materials before purchase by the school district.

The computer services, A and B above, were of particular interest to the teachers surveyed even though these services were not available at the time. Services C through G were used extensively by those surveyed, who apparently were satisfied with the level of service and required no further growth. The evaluation services, H and I above, were available but were used very little with no interest in any further development of these services.

How effective have the instructional materials centers been in providing information services? Smith (1973) evaluated the impact of the instructional materials centers by comparing the knowledge and perceptions of teachers of the mentally retarded in three Wisconsin regions--one where an instructional materials center had been in operation for two and one-half years, another with an instructional materials center in operation one-half year, and a third with no instructional materials center. Her results clearly indicated that teachers' familiarity and knowledge of specific materials was directly related to the length of time the instructional materials center had been in operation. The instructional materials centers were having a very positive impact on teacher knowledge. One interesting result was that teachers in areas with no instructional materials center were most interested in services related to receiving information about new materials, whereas those teachers in the two areas with an instructional materials center had shifted their interest to receiving inservice training and consultation services.

Publications. Publications of instructional materials centers, both regional and intrastate, are a primary communication link with special educators and are one way of distributing information about media and materials. A survey of 588 special educators in Wisconsin, Arizona, Nevada, and California (Williams et al., 1968) showed that more than 80 percent were receiving the publications of their regional Special Education Instructional Materials Center and nearly 60 percent found these publications of definite value to them in the classroom.

The publications distributed by instructional materials centers appear to take two primary forms: newsletters and catalogs. A national survey of 134 instructional materials centers (McMahon, 1973) found that 49 percent of the centers published a newsletter. Within the Great Lakes region, newsletters are published by 27 of 32 centers surveyed (Great Lakes Region Special Education Instructional Materials Center, 1974).

In addition, special educators felt that they needed a newsletter to keep informed. Fifty-five percent of 125 special educators in Missouri indicated that they felt a need for a newsletter (Garland, 1972).

There is also evidence to indicate that the primary reason special educators read newsletters is to gain information on instructional materials. A survey of 1122 educators who read the newsletter of the Northwest Regional Special Education Instructional Materials Center (1974) asked readers to check those items which they found valuable. "Teacher innovations" was checked by 78 percent, "Information on new classroom materials" was checked by 78 percent, and "Listing of inexpensive materials" was checked by 70 percent. These three items were checked more often than any others.

There is very little information available to indicate how many instructional materials centers publish a catalog of instructional materials. In the Great Lakes region, only six of 32 instructional materials centers surveyed provided catalogs of their holdings (Great Lakes Region Special Education Instructional Materials Center, 1974). If this is an indication of the number available across the nation, then very few are available. There is some indication that the availability of more catalogs would increase the usage of the instructional materials centers. The lack of a printed catalog was the most serious deterrent to the use of the Syracuse Instructional Materials Center according to 74 percent of a sample of 119 special educators in the area (Syracuse Associate Special Education Instructional Materials Center, 1970). The need for an annotated list of available materials was also mentioned by teachers in Union County, Oregon (Pellant and Latham, 1973). In Missouri, 83 percent of 125 special educators indicated a need for a catalog of instructional and professional materials (Garland, 1972). Catalogs obviously are necessary items for instructional materials centers in the business of providing information on instructional media and materials.

Information Retrieval Systems. The use of computerized information retrieval systems is increasing in the field of special education. Available data indicate that this service has tremendous potential for future growth. The Information Retrieval System at the University of Texas Special Education Instructional Materials Center was one of the first to be developed. The operating system receives as many as 1000 requests for information each month at an average total cost of $1.50 per retrieval (University of Texas Special Education Instructional Materials Center, 1972). A majority of users surveyed in 1972 indicated a congruence between what they requested and what they received. The turnaround time was judged satisfactory. (No data on average processing time was reported.) The most frequent criticism by teachers was lack of availability of materials listed in the computer printout. A related negative factor, the quantity and quality of the materials in the system, was cited by the personnel in Texas associate centers (McLaughlin et al., 1971). The most important positive factor cited

was the time saved. Most believed that teachers would make use of the system, but only if they were educated to the services offered and the procedures for receiving the services.

The great potential for use of computer services is illustrated by the overwhelming favorable response of 695 Ohio special educators to the following services (Brickell et al., 1974i):

A. a computer terminal at the school to get education prescriptions for individual children;

B. a computer or a computer terminal at the school to access information about materials and services.

Of 34 services, A was ranked first in order of growth potential and B was ranked fourth. "The most remarkable single finding of this entire study is perhaps the fact that special educators in all 16 [Ohio] regions chose a computer terminal at the school as a most-wanted service--despite the fact that in none of the 16 regions does such a service exist today (p. 24)."

It is clear that computerized information retrieval systems are perceived as a valuable source of information about media and materials in special education and can be expected to increase in value as they become available to more and more educators who desire them.

DELIVERY OF INSTRUCTIONAL MATERIALS

If materials are to be used by teachers, those teachers must have access to materials whether the materials are stored in the classroom, the school building, the school district, in the associate center, a state depository, a multi-state regional depository or national depository. Teachers, when asked, indicated that they preferred materials to be located close to them for convenient access (Brickell et al., 1974i; Williams et al., 1968). Teachers think that materials which they use on a sustained basis should be available in the classroom. Materials needed on a regular basis which could be shared with other teachers should be housed either in the building or a district office. In the studies cited below, some teachers perceived that it was useful to have materials stored in more remote locations, but this usually meant an intrastate center located such that the teacher could drive there or call there easily.

It is risky to provide generalizations from the diverse reports cited since they were done on the basis of different methodologies, asked different questions, and received their responses in different forms. The relative lack of information may indicate either that teachers are relatively uninterested in the delivery of instructional materials to their schools from some local or regional center or that they simply have not considered the opportunity. One piece of evidence (Williams et al., 1968) suggests that many teachers are able to purchase most of the materials they need. This may be especially true in cases where audiovisual materials requiring specialized equipment are concerned. This follows because it would be very difficult for a regional center to mail or deliver the specialized equipment for using the materials without loss of and/or damage to the equipment in transit. Either a special delivery service would be necessary or such materials would have to be demonstrated at some central location. Then, if sufficient interest existed, the equipment and materials would have to be purchased locally.

There is evidence that patrons who live or work close to a regional center will borrow materials from the center more regularly (Northwest Regional Special Education Instructional Materials Center, 1974). This typically means that students in programs at universities with instructional materials centers make the heaviest use of these collections. This use is not identified as to whether it is used in a classroom with the handicapped learners or used by a university student in a training course.

Teachers expressed concerns about length of the loan period, the length of time materials were in transit, and the possibility of reserving materials. This might suggest that teachers want materials at critical junctures in their teaching. The materials are less valuable if they arrive late or at some inappropriate time during the

school year. This would also suggest that the lending of materials for general use in the classroom is not likely to be particularly effective.

Going beyond the studies cited, it would seem logical that materials which are to be extensively used by teachers in classrooms should be stored in the classroom itself and only those materials which would receive occasional use should be housed elsewhere. Even materials used occasionally will be used more regularly and perhaps more appropriately if they are located within a very short distance from the point of use.

Location of Materials

Studies on teaching behavior (Gage, 1959; Travers, 1973) have shown that teachers tend to use materials which are immediately available in their environment and make decisions among familiar strategies. Therefore it seems likely that, unless instructional media and materials are known intimately by the teachers and unless they are either present in the teacher's immediate environment or conveniently accessible to the teacher, materials will not be used.

Delivery Services Desired

Loan of Materials Checked Out in Person. In a study of the Syracuse Associate Special Education Instructional Materials Center (1970), deterrents to utilization were ranked by 119 special education teachers. The lack of a printed catalog, insufficient loan period, personal time problems of the teacher, parking problems, and travelling distance were the five most serious deterrents to utilization. In the Brickell et al. (1974) studies of the Ohio Instructional Resource Centers, it was suggested that the loan of materials checked out in person was of high present use and low potential for the future. The need to browse in a collection was mentioned as a very low priority or as an afterthought.

Loan of Materials Ordered by Mail. In the survey by the Sonoma County Associate Instructional Materials Center (Hershey, 1973), 114 special education teachers ranked the distribution of materials fourth of 63 services. In the Brickell et al. (1974) studies, patrons in many of the regions in Ohio made use of mail delivery of materials. However, Brickell et al. concluded there was little potential for expanding this service beyond existing levels.

Chastain, in a study of the University of Kansas Instructional Materials Center (1969), found that few teachers were concerned about the time that it took for materials to be transported in the mails. There was high use of the collection earlier in the year and the number of requests decreased as the school year progressed.

Loan of Materials Ordered by Telephone. Brickell et al. (1974i) reported that telephone requests and messenger delivery of materials was by far the most preferred combination of methods for making requests and receiving materials.

Mailing Ordered Materials to the School. In Latham's analysis of the Guam Special Education Instructional Materials Center (1973) and Smith's analysis of Wisconsin Associate Special Education Instructional Materials Centers (1973), it was mentioned that materials should be delivered directly to the school rather than to a local center. It is presumed that mailing would enable this direct delivery of materials.

Mobile Materials Library Service. Mobile service to teachers was provided by the Inland Empire Special Education Instructional Materials Center at the University of Idaho (Northwest Regional Special Education Instructional Materials Center, 1973). There is no direct evidence of the effectiveness or the need for such a service.

AUTHORS' NOTE

While it is not possible to state definitive conclusions based on the studies reviewed, this summary should provide a starting point for further investigation of the needs for media and materials for the handicapped. This is the first time that a summary of this type has been attempted. Since many of the studies reviewed are unpublished fugitive documents, this summary should provide information to the field which has been previously unavailable in any compiled format.

REFERENCES

Armstrong, J. R. & Senzig, K. "Educational Materials: Instructional Materials Used and Preferred by Wisconsin Teachers of the Mentally Retarded." *Education and Training of the Mentally Retarded*, 1970, 5(2), 73-86.

Bogatz, B. E. "An Investigation of Teacher Expectancies of Instructional Materials." *Exceptional Children*, 1971, *38*, 233-236.

Brickell, H. M., Wong, S., & Grossman, R. *An Assessment of the Central Region Ohio Instructional Resource Center.* New York: Policy Studies in Education, June 1974. (a)

Brickell, H. M., Wong, S., & Grossman, R. *An Assessment of the Cuyahoga Regional Ohio Instructional Resource Centers.* New York: Policy Studies in Education, June 1974. (b)

Brickell, H. M., Wong, S., & Grossman, R. *An Assessment of the Dayton-Miami Valley Regional Ohio Instructional Resource Center.* New York: Policy Studies in Education, June 1974. (c)

Brickell, H. M., Wong, S., & Grossman, R. *An Assessment of the East Central Region Ohio Instructional Resource Center.* New York: Policy Studies in Education, June 1974. (d)

Brickell, H. M., Wong, S., & Grossman, R. *An Assessment of the Northwestern Region Ohio Instructional Resource Center.* New York: Policy Studies in Education, June 1974. (e)

Brickell, H. M., Wong, S., & Grossman, R. *An Assessment of the Southwestern Region Ohio Instructional Resource Center.* New York: Policy Studies in Education, June 1974. (f)

Brickell, H. M., Wong, S., & Grossman, R. *An Assessment of the Stark, Columbiana and Wayne Regional Ohio Instructional Resource Center.* New York: Policy Studies in Education, June 1974. (g)

Brickell, H. M., Wong, S., & Grossman, R. *An Assessment of the Summit, Medina and Portage Regional Ohio Instructional Resource Center.* New York: Policy Studies in Education, June 1974. (h)

Brickell, H. M., Wong, S., & Grossman, R. *A Study of the Ohio Special Education Instructional Resource Centers: Progress and Prospects.* New York: Policy Studies in Education, June 1974. (i)

Chastain, T. *Summer Project.* Lawrence: Kansas University Special Education Instructional Materials Center, August 1969.

Coxton, B. *Report of a Quality Assessment of School Programs in Dilenowisco Educational Cooperative.* Norton, Virginia: Dilenowisco Educational Cooperative, July 1972.

Curtis, J. J., Summers, H. D., & Fulp, J. E. *Recommendations for Materials Development: A Study of Perceived Needs for Materials by Type and Content* (Final Report submitted to Project LIFE, Inc.) Las Cruces, New Mexico: Zia Learning Systems, Inc., March 1974.

Delivery of Special Education Services in Rural Remote Areas (Working Conference Report, December 5-7, 1973, Portland, Oregon). Sponsored by New Mexico State University Regional Resource Center; University of Oregon RRC; University of Utah RRC; National Association of State Directors of Special Education; & Northwest Regional Educational Laboratory, Portland.

Friesen, E., Williams, L., & Bulgarella, R. *A Survey of Materials Usage and Needs in the Instruction of Handicapped Students* (Monograph Series No. 2). East Lansing: USOE/MSU Regional Instructional Materials Center for Handicapped Children and Youth, 1967.

Gage, N. L. (Ed.). *Handbook of Research on Teaching.* Chicago: Rand-McNally, 1959.

Garland, R. M. *Summary of Missouri Reactionnaire.* Lawrence: Kansas University Special Education Instructional Materials Center, 1972.

Great Lakes Region Special Education Instructional Materials Center. *Summary of Results: Associate Center Survey.* East Lansing: Author, July 1974.

Heaney, B. W. *Analysis of Handicapped Youths' Need for Vocational Training Programs* (Final Report). New Haven, Connecticut: Area Cooperative Educational Services, July 1974.

Hershey, S. *Development of the Sonoma County Associate Instructional Materials Center for Special Education.* Unpublished masters thesis, California State College, Sonoma, 1973.

Hoover, T. *Final Evaluation of the 1971 Summer Media Institute for Teachers of the Deaf.* Lincoln: Midwest Regional Media Center for the Deaf, 1971.

Hoover, T. *Final Appraisal of the 1972 Summer Media Institute for Teachers of the Deaf.* Lincoln: Midwest Regional Media Center for the Deaf, 1972.

Kakalik, J. S., Brewer, G. D., Dougharty, L. A., Fleischauer, P. D., & Genensky, S. M. *Services for Handicapped Youth: A Program Overview* (R-1220-HEW). Santa Monica, California: Rand Corporation, May 1973.

Kakalik, J. S., Brewer, G. D., Dougharty, L. A., Fleischauer, P. D., Genensky, S. M., & Wallen, L. M. *Improving Services to Handicapped Children with Special Emphasis on Hearing and Vision Impairments* (R-1420-HEW). Santa Monica, California: Rand Corporation, May 1974.

Kinsaul, J. M., Dorne, W., & Jensen, M. E. *A Summary of Findings and Recommendations for Curriculum Development Needs Assessment of the Educable Mentally Retarded in Glades, Martin and Okeechobee Counties.* Tallahassee: Florida State Department of Education, Education for Exceptional Children Section, June 1973. (ERIC Document Reproduction Service No. ED 082 430)

Latham, G. *Evaluation Report of the Guam Special Education Instructional Materials Center.* Eugene: Northwest Regional Special Education Instructional Materials Center, June 1973.

Latham, G., Pellant, W. R., & Burgoyne, M. *Evaluation Report of Northern Alaska Special Education Instructional Materials Center.* Eugene: Northwest Regional Special Education Instructional Materials Center, April 1973.

Leach, F. *Instructional Material Needs of Deaf-Blind Children.* Paper presented at the Callier Hearing and Speech Center, Dallas, 1970.

Lilly, M. S. & Kelleher, J. K. *Teachers' Perceived Instructional Needs in the Northwest Region* (Research Report No. 6). Eugene: Northwest Regional Special Education Instructional Materials Center, July 1971.

Martineau, J. W. *Evaluation Report for the Harney County [Oregon] Intermediate Education District Associate Special Education Instructional Materials Center.* Eugene: Northwest Regional Special Education Instructional Materials Center, July 1973.

McLaughlin, J. A., Hinojosa, V., & Trlica, J. *Evaluation of the UT SEIMC Role in the Second Annual Training Session Conducted by the Division of Special Education Texas Education Agency.* Austin: University of Texas Special Education Instructional Materials Center, 1971.

McMahon, K. V. "Report of Special Education Instructional Materials Center Survey." In K. V. McMahon (Ed.), *SEIMC Survey and Evaluations.* Madison: Department of Public Instruction, Division for Handicapped Children, March 1973.

Northwest Regional Special Education Instructional Materials Center. *A Summary of Evaluation Data for Specific Objectives as Stated in Inland Empire [Idaho] Special Education Instructional Materials Center Proposal Grant Period Dating July 1, 1972 - June 30, 1973.* Eugene: Author, 1973.

Northwest Regional Special Education Instructional Materials Center. *Additional Supplementary Materials: Circulation Records.* Eugene: Author, May 1974.

Pascale, P. J. & Murray, J. *A Survey of Professional Needs in Special Education in Northeastern Ohio.* 1973. (ERIC Document Reproduction Service No. ED 082 421)

Pellant, W. R. & Latham, G. "Report of SEIMC Survey in Union County, Oregon." In K. V. McMahon (Ed.), *SEIMC Survey and Evaluation.* Madison: Department of Public Instruction, Division for Handicapped Children, March 1973.

Smith, B. A. "Associate Special Education Instructional Materials Centers: An Evaluation of their Impact." In K. V. McMahon (Ed.), *SEIMC Survey and Evaluation.* Madison: Department of Public Instruction, Division for Handicapped Children, March 1973.

Syracuse Associate Special Education Instructional Materials Center. *Syracuse ASEIMC Survey.* Syracuse: Author, September 1970.

Travers, R. M. W. (Ed.). *Handbook of Research on Teaching* (2nd ed.). Chicago: Rand-McNally, 1973.

University of Texas Special Education Instructional Materials Center. *Information Retrieval System: Fiscal Year 1972.* Austin: Author, 1972.

USOE/MSU Regional Instructional Materials Center for Handicapped Children and Youth. *A Survey of Materials Usage and Needs in the Instruction of the Visually Handicapped Student* (Monograph Series No. 1). East Lansing: Author, 1967.

Weinthaler, J. A. *Report of Needs Analysis Project: Definition of "Need for Competency in Beginning Teaching."* New Haven, Connecticut: Southern Connecticut State College, December 1973.

Weintraub, F. J. & Abeson, A. *An Assessment of the Extent and Nature of Delaware's Educational Efforts for Handicapped Children* (Final Report). Arlington, Virginia: Council for Exceptional Children, February 1971.

Williams, C. F., Johnson, G. H., Smyke, P. H., & Robinson, J. H. *Special Education Instructional Materials Center Network: A Pilot Evaluation of Two Prototype Centers* (Final Report). Silver Spring, Maryland: American Institutes for Research, August 1968.